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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/660,655

09/12/2003

Chang-Seok Geum

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7590

08/29/2011

MCKENNA LONG & ALDRIDGE LLP
1900 K STREET, NW
WASHINGTON, DC 20006

EXAMINER

TADAYYON ESLAMI, TABASSOM

ART UNIT

PAPER NUMBER

1712

MAIL DATE

DELIVERY MODE

08/29/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/660,655	Applicant(s) GEUM, CHANG-SEOK	
	Examiner TABASSOM TADAYYON ESLAMI	Art Unit 1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 11 and 15-18 is/are pending in the application.
- 5a) Of the above claim(s) 1-10 is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 11, 15-18 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

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1. Applicant's election of Group II in the reply filed on 08/16/04 is acknowledged.

Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. Claims 1-10 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Group I, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 08/16/04

DETAILED ACTION

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 11, 15-16, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shigeru Ishida (Japanese Patent Application: 06-114315, here after Ishida), further in view of Satoshi Yamada et al (U. S. Patent: 6001203, here after Yamada), and Enchi (WO00/11710, here after Enchi, where U. S. Patent: 6455099 is cited as legal translation).

Claims 11, 15-16 and 18 are rejected. Ishida discloses a method for dropping dropping material comprising: loading a substrate on a table [0009]; lowering a body supporting a syringe (cartridge 2) having a nozzle (1) at one ends toward the substrate using a vertical driving motor (19, z-axis motor controller) [0023, fig. 1, fig. 4], wherein

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the vertical driving motor drives the syringe according to driving data input from a user through an input unit (keyboard) [0013]. It is also inherent that the lowering is done with a speed (first speed). Ishida teaches stopping the lowering when the nozzle contacts the substrate, wherein a contact type switch (13) detects the nozzle contacting the substrate; Lifting up the body, wherein the contact type switch detects the nozzle being isolated from the substrate [0025-0026, 0014-0018]; wherein the lifting is inherently performed with a speed; detecting an initial value between the nozzle and the substrate when a state of the contact type switch is switched, wherein the initial value is a height of the nozzle from the substrate when the nozzle is in contact with the substrate and wherein the detecting the initial value is performed by a laser displacement sensor[0018-0020]; positioning the body, so that the nozzle reaches a desired height from the initial value and controlling the gap between the substrate and the nozzle to be maintained at a certain interval; and horizontally moving the table with the loaded substrate in forward/backward and left/right directions while the dropping material within the syringe is being dropped through the nozzle onto the substrate[0019-0023].

Although the references do not teach the nozzle is for making liquid crystal device, however it is obvious to use the nozzle to drop composition for making liquid crystal, for example Yamada teaches nozzles may be used to deposit liquid crystal material or sealing material in LCDs[column 1 lines 1-23]. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to have a method of dropping dropping material as Ishida teaches where the dropping material is liquid crystal, because it is obvious in art to drop liquid crystal composition with nozzles for

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making LCDs. Although Ishida does not teach the lifting is slower than the lowering.

Enchi teaches a method of dispensing material such as sealing material with nozzle where lifting nozzle is slower than lowering the nozzle [fig. 4, column 1 lines 42-52].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to have a method of dropping dropping material as Ishida and Yamada teach where the speed of lifting the nozzle is slower than the speed of lowering the nozzle, because it is obvious to substitute the lifting speed of the nozzle and the lowering speed of the nozzle of Enchi in Ishida in absence of unexpected result.

5. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shigeru Ishida (Japanese Patent Application: 06-114315, here after Ishida), Satoshi Yamada et al (U. S. Patent: 6001203, here after Yamada), and Enchi (WO00/11710, here after Enchi, where U. S. Patent: 6455099 is cited as legal translation), further in view of Vinouze et al (U. S. Patent: 5431771, here after Vinouze).

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Claim 17 is rejected for the same reason claim 11 is rejected. The said references do not teach using a silver paste. Vinouze teaches the electrode layers of LCDs may be applied using dispensing nozzles [column 3 lines 3-14]. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to have a method of dropping dropping material as Ishida, Yamada, and Enchi teach where the the distance between the nozzle and substrate when forming a silver paste layer of an LCD such as of Vinouze teach with reasonable expectation of success because Vinouze teaches nozzles are used to deposit electrode layers of LCD's.

Response to Arguments

6. Applicant's arguments see Remarks, filed 06/15/11, with respect to the rejection(s) of claim(s) 11 under 35 USC 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Ishida.

7. The applicant argues Carr does not teach the nozzle contacts with surface of substrate, however Ishida teaches this limitation (see claim rejection above).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TABASSOM TADAYYON ESLAMI whose telephone number is (571)270-1885. The examiner can normally be reached on 7:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on 571-272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tabassom T. Tadayyon-Eslami
Examiner
Art Unit 1712

/Tabassom T. Tadayyon-Eslami/
Examiner, Art Unit 1712

/Michael Cleveland/

Supervisory Patent Examiner, Art Unit 1712